National Institute of Environmental Health Sciences

Association of haemorrhagic fever with renal syndrome and weather factors in Junan County, China: A case-crossover study

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Abstract:

Haemorrhagic fever with renal syndrome (HFRS) is a type of vector-borne zoonosis sensitive to climate change. To explore the short-term effect of air temperature and amount of precipitation on HFRS incidence, a total of 13 722 clinically confirmed HFRS cases from January 1977 to December 2001 in Junan County, China were included in this study. According to symmetric bidirectional case-crossover design, the hazard period (the three calendar months preceding the month when the case was diagnosed) and the control period (the same calendar month of the year before and the year after the hazard period) matched and conditional logistic regression was used to examine the effect of monthly mean temperature and precipitation on the risk of HFRS. The results showed the facilitating climatic conditions for HFRS included: condition with moderate mean air temperature (10-25 degrees C) and abundant precipitation (>120 mm) 3 months before [odds ratio (OR) 1.346, 95% confidence interval (CI) 1.191-1.522] and 2 months before (OR 1.193, 95% CI 1.063-1.339); and condition with temperature >25 degrees C and abundant precipitation (>120 mm) 3 months before (OR 1.17, 95% CI 1.004-1.363). Temperature of 10-25 degrees C and moderate precipitation (10-120 mm) in the current month was the most favourable condition for HFRS incidence.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Precipitation, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: China

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease, Other Health Impact

Other Health Impact: Haemorrhagic fever with renal syndrome (HFRS)

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified